compression. Otherwise the histological changes coincided with the findings in the various forms of " Dystrophia muscularis progressiva " of Erb. J. C.

Epidemic Cerebro-Spinal Meningitis.—Friis, of Copenhagen,has observed thirty cases of cerebro-spinal meningitis treated in the General Hospital of that city, and six that were treated outside. The disease mostly appeared in the suburbs of the city, in some cases—small house epidemics where three to five would be attacked in a house or family. Bacteriologically, the cause could not be discovered. The symptoms were the usual ones. In seventeen cases there was herpes with seven deaths. The patellar reflex was examined seventeen times and was found present in fourteen patients. In three it was absent, as they were unable to relax their muscles. Kemig's symptom contracture in flexion was discovered in twenty-one out of twenty-five cases, and is due, according to the writer, to an inflammatory affection of the nerve roots or of the cauda equina. It is not found in tuberculous cerebral meningitis. In eleven cases the urine contained albumen, in one sugar, patient died in four days, and in two polyuria. In fifteen cases they were carefully examined, and in three a non-reactive pupil; a choked disc in three. In four patients ear complications set in; in two, otitis media, in one, otitis externa and in one difficult hearing, in consequence of no apparent organic changes in the organ. An articular complication was observed in a ten-year old boy, an effusion appearing in his right elbow joint on the ninth day. A puncture evacuated synovia, but it contained no micro-organisms. He presents several cases, the history of where the diagnosis was difficult, for example, in one, a pregnant woman, it began like an incipient eclampsia.—*Ugeskrift for Saeger*, R. 4, Bd. 26, p. 407 and 431.

F. H. P.

PATHOLOGICAL.

Motor Phenomena. — By Dr. Rudolf Kolish (Deutsche Zeitschuft für Nervenheilkunde, July, 1893).

The author's object in this contribution is to present new evidence in favor of Kahler and Pick's view that the compact pyramidal tracts are involved in the production of the motor phenomena, and not the optic thalamus as advocated by Stephan. The cases presented by Kolish to support Kahler and Pick are briefly as follows:

CASE I. Bilateral oculo-motorius paralysis, more marked on right side; cerebellar ataxia, motor ataxia of upper and lower extremities, hemiparesis, hemichorea. Death caused by supervening tubercular meningitis.

The autopsy revealed a tubercle of the region of the corpora quadrigemina, mainly on the right side.

The microscopic examination of the brain showed partial lesion of the roots of the oculo-motorius to which the ocular paralysis presented by the patient *in vivo* is referable.

Kolish refers the cerebellar ataxia to lesion of the right nucleus rubor. For the motor ataxia of the extremities, he holds the lesion of the tegmentum of the peduncle responsible. But in Kolish's case, the bilateral motor ataxia remains without explanation. It is possibly due to mechanical influence.

Case II. Oculo-motorius paralysis, particularly marked on the right side; left hemiplegia and hemichorea; tie of left facial nerve; normal sensibility; absent knee-jerks.

No autopsy. Diagnosis made of lesion of right cerebral peduncle, extending partly over median line. Anatomical nature most probably a tubercle. Tic of the facial nerve, and the chorea is explained by involvement of the motor paths within the peduncle.

Both these cases present post-hemiplegia chorea.

Similar to Case II is Menz's case, which presented the following symptoms: Right facial and partial motor oculi paresis; complete left oculo-motor paralysis; right hemiparesis and hemichorea; hemiplegic gait.

The diagnosis made in this case was, lesion in the region of the left peduncle, crossing the median line.

Different theories have been propounded to account for these post-hemiplegic motor phenomena. Charcot believes in the existence of a choreigenous bundle in the internal capsule running near the carrefour sensitiv. Gowers localizes their origin in the thalamus. Galvani and Stephan are of the same opinion. Kahler and Pick refer the post-hemiplegic movements to irritation of the pyramidal tracts. Kolish supports the views of Kahler and Pick, and claims it finds no contradiction in any known observation. He presents the following cases as showing that lesions of the pyramidal tract not in the vicinity of the cerebral ganglia may produce the disturbances under consideration.

Case of Ewald: Tubercle in the pons beneath the corpora quadrigemina to the right of the median line, invading the substantic nigro. *In vivo* pendulum-like movements of the left extremities.

Case of Broadbent: Glioma on the floor of the fourth ventricle, involving the facial and abduceus nuclei, and to a slight extent the pyramidal tract. The main symptoms were left facial and abduceus paralysis; choreic movements of the right arm and both legs, particularly the right.

These cases are similar to Case I. As in the latter case, the brain was perfectly normal (excluding the lesion of the corpora quadrigemina), the hemichorea may be referred to the irritation of the pyramidal tract in its course through the pons. As the tubercle was sharply defined, and no pressure symptoms manifest during the course of the disease, operation through distance, particularly indirect lesion of the thalamus, may be excluded.

There are also no grounds for believing that the lesion of the structures lying in the posterior part of the pons, or in the tegmentum of the peduncles, can explain the hemichorea.

Kahler and Pick's view is supported by cases of Müllendorff, Froret, Henoch and Eisenlohr.

As regards Stephan's theory, it is based on the unstable ground that all motor disturbances, as ataxia, intention tremor and hemichorea are disturbances of co-ordination. His claim that such disturbances can only be called forth by lesions of the pyramidal tract on a level with the thalamus, is also untenable. All cases of thalamus lesion, showing hemichorea, also manifest disorders of sensibility and hemiparesis, and it is more difficult to exclude impression through distance of lesions in the thalamus upon the pyramidal tracts than of those in the pons upon the thalamus. Thalamus lesions leaving the pyramidal tracts intact are not accompanied by motor disturbances.

For the further consideration of the subject, Kolish recommends a study of the different divisions of the motor tracts, beginning at the cortex and ending in the medulla oblongata, which experience has shown to be the lowest limit for the production of co-ordinated switching. From the cases and facts presented, he believes to have shown that post or prehemiplegic motor phenomena may be caused as well by lesions affecting the compact pyramidal tracts within the internal capsule, as by such involving the motor tracts in the pedunculus cerebelli.

In conclusion, Kolish cites several published cases,

generally of progressive paralysis, in order to prove his contention that the motor phenomena accompanying such diseases may originate in the cortex and cortical white substance, and he believes that the cases cited show that movements allied to hemichorea and hemiathetosis may be called forth by irritation of the cortex. As most of the cases of hemichorea and hemiathetosis are referable to lesions of the compact pyramidal tract in the internal capsule, the author thinks it unnecessary to present any original cases. That lesions in the medulla may call forth motor disturbance, though possible and probable, has not yet been conclusively shown.
J. C.

Pathological Gaits.—Chr. Leegard, of Christiana, calls attention to the fact that but few of the symptoms of nervous disease can be used more for diagnostic purposes than the gait. To obtain a classification, he divides the various kinds into co-ordinated and inco-ordinated movements. Gaits with co-ordinated movements he calls synergic movements. They are associated with changes in the cortico-muscular system, which connects the cortex with the muscles. This system consists of two parts: The cortico-motor cells with the peripheral nerves and muscles on the other side. In affections of the former the gait is spastic, and in those of the latter is paralytic. After having described their general causes and methods of appearance, he considers the partially paralytic gaits which he has observed. The gluteal gait appears with paralysis of the gluteaus maximus. It is seen on attempting to extend the thigh, and is not so soon observed in walking on a level as on ascending an incline when there is an inclination to tire quickly? The patient among other movements steps with difficulty upon a chair or arises himself up when he has reached for something on the floor. In paralysis of the lesser gluteal there, appears a waddling gait, so that in hemipleg, a half sided one-sided-affection of these muscles, the patient waddles towards the affected side. The full knee-gait is observed when the both flexors and extensors are paralysed. The knee has then no support, and the patient, to preserve his equilibrim, takes his cane and places it close in near the leg, where it acts as a splint; at the same time he tries to keep even a portion of the body weight from resting on that side. The cane is here held on the affected side, while in the other diseases the cane is carried on the well side. The over extended knee-gait is